Diagnostic Ophthalmology
Ophtalmologie diagnostique

Bruce H. Grahn, Lynne S. Sandmeyer, Bianca S. Bauer

History and clinical signs

An 8-year-old spayed female Boston terrier dog was referred to the ophthalmology service at the Western College of Veterinary Medicine because of black anterior chamber masses and leucocoria (Figure 1). The menace responses were absent. However, the direct and consensual pupillary light reflexes, palpebral, and oculocephalic reflexes were present in both eyes. Schirmer tear tests (Schirmer Tear Test Strips; Alcon Canada, Mississauga, Ontario) were 23 mm/min in the right and left eye, respectively. The intraocular pressures were estimated with a rebound tonometer (Tonovet; Tiolat Oy, Helsinki, Finland), and were 8 mmHg bilaterally. The pupils were dilated with tropicamide (Mydriacyl; Alcon Canada, Mississauga, Ontario), and biomicroscopic (Osram 64222; Carl Zeiss Canada, Don Mills, Ontario) and indirect ophthalmoscopic (Heine Omega 200; Heine Instruments Canada, Kitchener, Ontario) examinations were completed. Abnormalities in the anterior segments were leucocoria and black masses in both eyes. The posterior segment examination was precluded by the leucocoria. Fluorescein stain (Fluorets; Bausch & Lomb Canada, Markham, Ontario) was applied and rinsed from the corneal surfaces and the eyes were examined under cobalt filtered light and staining was negative.

What are your clinical diagnoses, diagnostic and therapeutic plans, and prognosis?

Discussion

Our clinical diagnoses were bilateral uveal cysts, immature cortical cataracts, and phacolytic uveitis. The owner was provided with a prescription for diclofenalac (Voltaren Ophthalmic; Novartis Ophthalmics, Mississauga, Ontario), one drop, q8h for 6 wk. At that time a routine complete blood cell count, serum biochemical profile, and urinalysis, as well as photopic electroretinography were complete; data were within normal reference ranges. We completed routine pre-anesthetic sedation, general anesthesia, and bilateral phacoemulsification, and intraocular lens implantation and aspiration of the uveal cysts within the anterior chambers. The dog recovered from general anesthesia and was treated topically with antibiotics, corticosteroids, non-steroidal anti-inflammatory agents, and a mydriatic drug. The dog was re-evaluated every month for 3 mo and then once every 6 mo for 1 y. No complications were noted and the dog was treated with voltaren q24h OU for another year with yearly re-examinations for life being advised.

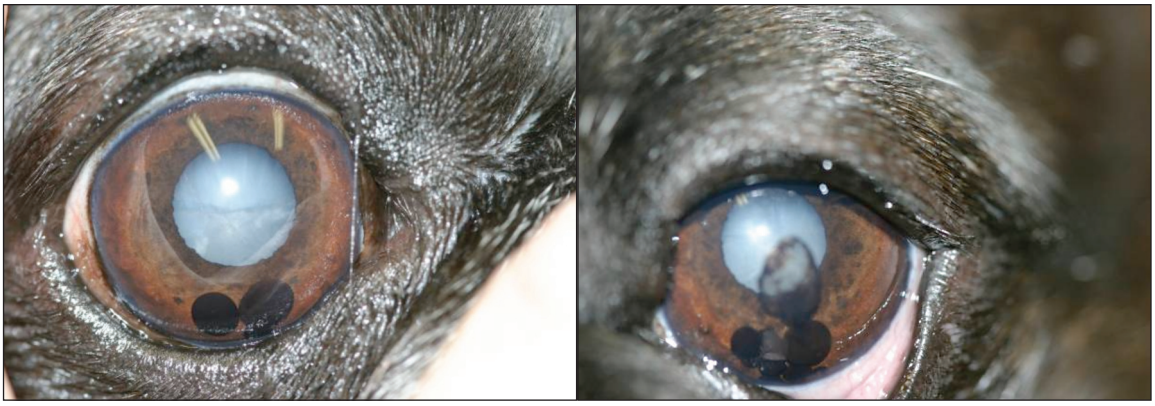

Figure 1. The right and left eyes of an 8-year-old spayed female Boston terrier 45 minutes after topical tropicamide therapy.

Department of Small Animal Clinical Sciences, Western College of Veterinary Medicine, University of Saskatchewan, 52 Campus Drive, Saskatoon, Saskatchewan S7N 5B4.

Immature and mature cataracts are most commonly treated by extracapsular phacoemulsification and intraocular lens implantation by veterinary ophthalmologists; the visual prognosis for each eye is excellent. Boston terriers, however, are significantly different in regards to prognosis (1), in that they have an increased prevalence of cataracts, many of which are inherited (2). Based on our experience, the familial cataracts of Boston terriers begin as an equatorial spoke-like cataract, which slowly progresses undetected under the iris for many years prior to emerging at the pupil margin and being detected by the owner. Lens-induced uveitis is subtle in these dogs as noted in this case with mild conjunctival hyperaemia, hypotony, and a resistance of papillary dilatation after mydriatic therapy. The major complications that threaten vision in Boston terriers after cataract surgery and lens implantation are progressive corneal ulceration, uveitis, and secondary glaucoma and retinal detachments (1).

The uveal cysts in this Boston terrier may also be inherited. Cysts are over represented in this breed of dog (3); however, they also could be a complication of long-standing phacolytic uveitis. All the cysts were removed by aspiration in this dog during the phacoemulsification, except for the partially deflated left central cyst which was adherent to the corneal endothelium. We were concerned that we could have damaged the corneal endothelium which would have predisposed the eye to corneal edema and possibly corneal ulceration had this adherent partially deflated cyst been removed. Although uveal cysts were present along the posterior iris and on the ciliary processes, none had been observed to enlarge or float into the anterior chamber at the 6-month re-examination.

References

1. Klein HE, Krohne SG, Moore GE, Stiles J. Postoperative complications and visual outcomes of phacoemulsification in 103 dogs (179 eyes): 2006–2008. Vet Ophthalmol 2011;14:114–120.
2. Gelatt KN, Mackay EO. Prevalence of primary breed-related cataracts in the dog in North America. Vet Ophthalmol 2005;8:101–111.
3. Corcoran KA, Koch SA. Uveal cysts in dogs: 28 cases (1989–1991). J Am Vet Med Assoc 1993;203:545–546.